REMARKS

The present invention is directed to methods and devices used to provide a purified gas for use and reuse in medical procedures in which the gas is contaminated with other gases during the medical procedure, by removing the contaminants from the gas and recovering and reusing the decontaminated gas. The method is most advantageously used in medical imaging processes, such as magnetic resonance image (MRI), where hyperpolarized image enhancing noble gases, notably He^3 or Xe^{129}, are used for image enhancement in brain and lung imaging, and in which the contaminants are contributed by the exhalant gases from the imaged patient. The contaminated gas is passed through a series of drying and purification steps to remove the contaminants from the exhalant gases and separate the desired noble gas from the mixture. The purified noble gas is then recovered and stored for reuse.

Claims 1-42 were originally issued in U.S. Patent No. 6,408,849. New Claims 43-57 were added in the Preliminary Amendment filed with this Reissue Application.

Allowable Subject Matter:

Reissue Applicant appreciates the notification that Claims 28, 29 and 32-35 are merely objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Such amendments are not being made at this time, as it is believed that in view of the arguments made herein, such amendments are not necessary.

Defective Reissue Oath/Declaration:

Reissue Applicant appreciates the notification that the reissue oath/declaration filed with this application is defective because it fails to identify at least one error which is relied upon to support the reissue application. However, it is believed that the required error statement has been fully complied with. The reissue Declaration filed states that the first defect making the patent wholly or partly inoperative is "by virtue of the patentee claiming less than he had the right to claim in the patent." The second defect identified spells this out in greater detail, namely that "As originally filed and issued, the subject patent contained only method claims. These claims have been retained and additional method claims and apparatus (device and machine) claims have been added by way of the Preliminary Amendment."

It is believed that this recitation of error satisfies the requirements of 35 U.S.C. 251 and MPEP Section 1402, in that, as stated therein, the claims as issued were too narrow, reciting only method claims. Now the reissue application contains method claims and apparatus claims. Reconsideration and withdrawal of the request for a new declaration are respectfully requested.

Abstract Objection:

The abstract of the disclosure is objected to because it exceeds the maximum of 150 words. As requested, the Abstract has been reduced in word count to less than 150 words.

Specification Objections:

The disclosure is objected to because of the following informalities: reference number 53 is used when referring to a line and is then later used to reference a bag. As

requested, the error regarding reference number 53 has been corrected in the specification to the proper "bag" number - 56.

Claims 46, 48, 49, 50, 51, and 52 are objected to because of the following informalities; elements of the claims have reference numerals that do not exist in the drawing. The erroneous reference numbers have been deleted from the claims.

Claim Rejections - 35 U.S.C. § 112:

Claim 35 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite, as the Examiner questions what "a process unit" is referring to. The specification and Claim 35 have been amended to state that the process unit is a "decontamination process unit" – that is, a device (or "unit") in which decontamination takes place. These amendments should likewise clarify Claims 36-42. Reconsideration and withdrawal of the Section 112 rejection of these claims are respectfully requested.

Claim Rejections - 35 U.S.C. § 103:

Claims 1-21 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert et al. (US 5,545,396) in view of Cates Jr. et al. (US 5,809,801). This rejection is respectfully traversed.

Albert et al. neither teaches nor suggests the present method or apparatus claims – which are directed to the purification of contaminated inert gas used in medical procedures. Instead, Albert et al. simply notes at Col. 12, lines 56-67, that due to the high cost of the inert gases, such gases can and should be recovered after use – for example, from the exhaled breath of human subjects over about a 20 minute period.

Vague suggestions regarding the use of cold traps and/or a zirconium getter are not sufficiently enabling to make the present claims obvious. This recitation by Albert et al. is merely a recognition of a problem to be solved – by others. Given the large number of available options, the present invention is not a mere aggregation of a number of old parts or elements which, in the aggregation, perform or produce no new or different function or operation than that theretofore performed or produced by them. The Reissue Applicant selected the purification methods recited in the rejected claims, as well as the 10 ppm contaminant level, none of which were taught or suggested by Albert et al.

The citation of Cates Jr. et al. does not make up the deficiencies of Albert et al. Cates simply teaches a method and apparatus for the formation and accumulation of hyperpolarized noble gas – Xe^{129} in frozen form. As taught at Col. 6, lines 22-52, the source gas for use in this invention is not typical exhalant gas from a human patient, but instead consists of nitrogen, hydrogen, helium and xenon. The teachings of this patent are quite specific and limited to the invention defined therein, namely a method and apparatus for the formation and accumulation of hyperpolarized noble gas – Xe^{129} in frozen form.

Reconsideration and withdrawal of the Section 103 rejection of Claims 1-21 as being unpatentable over Albert et al. in view of Cates Jr. et al. are respectfully requested.

Claims 22-27, 30 and 31 are rejected under 35 U.S.C. 103(a) as being unpatentable over Albert in view of Cates Jr. et al. as applied to claim 15 above, and further in view of Rosen et al. (6,085,743). This rejection is respectfully traversed.

Albert et al. has been distinguished above – it simply teaches the known problem regarding the desired result of recycling expensive noble gases used in medical

procedures. Otherwise, the teachings are totally inadequate for making the rejected claims obvious.

The secondary reference Cates Jr. et al. has been distinguished above – it simply teaches a specific method and apparatus for the formation and accumulation of hyperpolarized noble gas – Xe^{129} in frozen form. Otherwise, the teachings are totally inadequate for making the rejected claims obvious.

The final reference cited, Rosen et al., fails to make up the deficiencies of Albert et al. and Cates Jr. et al. The Rosen patent is simply another method designed to produce and deliver a polarized noble gas such as Xe^{129} or He^{3} to a patient (animal or human) undergoing a medical procedure such as MRI/NMR. Nothing is taught or suggested in this patent regarding the recovery and purification of these noble gases after delivery to the patient. See Col. 6, line 61 to Col. 7, line 38.

Reconsideration and withdrawal of the Section 103 rejection of Claims 22-27, 30 and 31 as being unpatentable over Albert, in view of Cates Jr., and further in view of Rosen et al. are respectfully requested.

Double Patenting:

Claims 43-55 are rejected under 35 U.S.C. 101 as claiming the same invention as that of claims 1-13 of prior U.S. Patent No. 6,471,747. This rejection is respectfully traversed.

The issue here is one of priority of invention, not double patenting. The '747 patent claims priority from Provisional Application Serial No. 60/140,054, filed **June 21,**

1999. The present application is a reissue of U.S. Patent No. 6,408,849, based upon Application Serial No. 09/336,060, filed **June 18, 1999**. Thus, since the '849 patent supports the present claims, these claims are entitled to the June 18, 1999 filing date of that patent. See MPEP Section 1412.01. Reconsideration and withdrawal of the Section 101 rejection of claims 43-55 are respectfully requested.

Claims 56 and 57 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 14 and 15 of U.S. Patent No. 6,471,747.

Again, the issue here is one of priority of invention, not double patenting. The '849 patent supports the present claims, and thus these claims are entitled to the June 18, 1999 filing date of that patent. See MPEP Section 1412.01. Reconsideration and withdrawal of the nonstatutory obviousness-type double patenting rejection of claims 56 and 57 are respectfully requested.

EXTENSION OF TIME

Applicant hereby petitions for a three-month extension of time in connection with the filing of this response. The initial three-month response deadline expired on May 23, 2007. This extended filing deadline expires on August 23, 2007.

FEE AUTHORIZATION

Please charge all fees associated with this filing to our Deposit Account – No. 19-0733.

Conclusion:

Allowance of the pending claims is respectfully requested. A Supplemental Declaration regarding the amendments made herein will be supplied once the application indicated as being in condition for allowance.

Respectfully submitted,

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